

# CO-PLANARITY AND TOP-DOWN EXAMINATION METHOD AND OPTICAL MODULE FOR ELECTRONIC LEADED COMPONENTS

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## ABSTRACT OF THE DISCLOSURE

Manufacturing lines include inspection systems for monitoring the quality of parts produced. Manufacturing lines for making semiconductor devices generally inspect each fabricated part. The information obtained is used to fix manufacturing problems in the semiconductor fab plant. A machine-vision system for imaging an object having a first side and a second side includes an imager, and an optics apparatus that images two or more views of the first side of the object and images two or more views of the second side of the object. The two or more views of the first side and the second side of the object are each from different angles. The object includes at least one major surface. A divider background surface is placed near the at least one major surface of the object to obtain separate images of features of the object on the first side of the object and features of the object on the second side of the object. In one embodiment, the divider diffuses light to back light the features on the object on the first side and back light the features on the second side of the object.

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